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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/523,262

03/03/2005

Takashi Maeda

2005_0059A

8304

52349

7590

07/09/2008

WENDEROTH, LIND & PONACK L.L.P.

2033 K. STREET, NW

SUITE 800

WASHINGTON, DC 20006

EXAMINER

CAZAN, LIVIU RADU

ART UNIT

PAPER NUMBER

3729

MAIL DATE

DELIVERY MODE

07/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/523,262

Applicant(s)

MAEDA ET AL.

Examiner

LIVIOUS R. CAZAN

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-32, 34, 35 and 37-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30-32, 34, 35 and 37-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/08)
Paper No(s)/Mail Date 11/14/07.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/25/2008 has been entered.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. **Claims 30, 31, 34, 35, and 38, and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Shiyama (JP08083997).**

Shiyama discloses a component mounting apparatus comprising: a vacuum generating source (23, Fig. 1); nozzles (14, Fig. 1) connected to said vacuum generating source, each of said nozzles having a control valve capable (21, Fig. 1) of shutting a vacuum air passage (20, Fig. 1); a mounting head (15, Figs. 1 and 2) supported in a movable manner and holding said nozzles; a component recognition device (16, Fig. 2) positioned to face said mounting head for recognizing components held by said nozzles; and a controller (35, Fig. 4) for controlling operations of the component mounting apparatus. Shiyama also discloses using the nozzles, connected to the single vacuum generating device, to perform component pick up operations by picking up components

(5, Fig. 1) and perform component mounting operations by mounting said components onto respective predetermined mounting positions of a circuit substrate (6, Fig. 2); and preventing occurrence of a defective circuit substrate, due to a component failing to be mounted on said circuit substrate, by (i) detecting vacuum pressure decrease of one of said nozzles relative to a vacuum pressure to be achieved at a time of picking up a component by said one of said nozzles, said detecting occurring after the one of said nozzles has passed over a component recognition device; (ii) making a judgment that said one of said nozzles has lost the component due to dropping of the component, if said vacuum pressure decrease of said one of said nozzles exceeds a predetermined first threshold (see para. [0029]), and (iii) skipping a component mounting operation to be performed by said one of said nozzles (see para. [0028]). Clearly, since the detected value is compared to an expected value, an absolute value of the pressure is determined. Moreover, the pressure is checked at various times, and vacuum is shut off at the nozzle if the absolute pressure is higher than a threshold value (see para [0028]). In this manner, mounting is only performed using nozzles that have not dropped a component.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 32 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiyama in view of Yamamoto (WO01/43523 with US7065864 being used as an English language equivalent).

6. Shiyama discloses the same invention as the Applicant, except for utilizing a recognition camera (imaging device) to identify which of the nozzles has failed to pick up a component based on images obtained by the imaging device (camera). Shiyama does have a recognition station (16, Fig. 2), but it is not clear whether this recognition station is an imaging device (i.e. camera) and Shiyama does not appear to explicitly discuss identifying a nozzle has failed to pick up a component based on data from the recognition station.

7. Yamamoto discloses imaging each of the nozzles of a component mounting apparatus with an imaging device (Ref. # 207, col. 14, Ins. 21-24) and identifying which nozzle has failed to pick up a component based on the obtained images (col. 14, Ins. 42-46) in order to visually determine which nozzle failed to pick up a component, so component mounting step can be skipped (col. 14, Ins. 42-46). See Fig. 2.

8. At the time the invention was made, it would have been obvious to one having ordinary skill in the art to modify the invention of Shiyama in view of the teachings of Yamamoto, by including using such an imaging device (i.e. camera) as the recognition station, whereby if a component is missing during component recognition, a failed pickup operation is detected. One of ordinary skill in the art would have been motivated to do so in order to detect a failed pickup operation even before executing a pressure checking operation at the recognition station, thereby increasing the operational speed of the apparatus.

Response to Arguments

9. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LIVIUS R. CAZAN whose telephone number is (571)272-8032. The examiner can normally be reached on M-T 6:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571)272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. Dexter Tugbang/
Primary Examiner
Art Unit 3729

/L. R. C./ 7/7/2008
Examiner, Art Unit 3729